SYMPATHETIC NERVE SYMPTOMS, WITH ULNAR PARALYSIS FOLLOWING DIPHTHERIA.

Dr. B. SACHS presented a girl of fourteen years, who still exhibited the remnants of a poliomyelitis of the right upper extremity, which came on when she was about eighteen months old. It would be noticed, he said, that the atrophy of the arm was extreme. In March, 1895, this girl had had diphtheria, and after this had developed an atrophic paralysis of the left upper extremity, chiefly of the muscles of the hand, and more particularly of the interossei muscles. This condition was associated with a narrowing of the palpebral fissure and of the pupil on the left side, and it was for this reason that he presented the case. There could be no doubt that ever since the beginning of the poliomyelitis, the left side had been entirely normal up to the attack of diphtheria.

Examination had shown that there was a diminution of all the forms of sensation in the ulnar distribution on the left side. The condition of the hand might possibly be due to a poliomyelitis, but owing to the presence of sensory disturbances, and the very acute onset of the trouble after the diphtheria, this could be safely excluded. The diagnosis, therefore, was a peripheral neuritis coming on after diphtheria. The curious point was the association of the sympathetic nerve symptom with this peripheral neuritis. The only way he could account for it was by supposing that the affection must have been located near the issuance of the roots of the spinal cord, for in that part there are communicating branches between the roots and the sympathetic nerve system.

Dr. C. A. HERTER said he was not sure that the possibility of the cord being involved at the level of the cilio-spinal centre could be excluded. The narrowing of the lid and the contraction of the pupil on that side would suggest very strongly that either the cord was involved, or the roots were involved close to the cord. He had never seen that symptom in a peripheral lesion, which without any doubt, could be said to be strictly limited to the peripheral nerves. He had seen this ocular symptom several times in cases of crushing injury to the spinal cord.

Dr. WILLIAM H. THOMSON said he agreed with the last speaker, that the case appeared to be one of localized myelitis. Such cases were not unknown in connection with peripheral palsy. It would be very difficult to account for that association on any theory of peripheral neuritis. For a good while he had given up the idea that a diphtheritic paralysis was necessarily a neuritis; he thought the changes were very often characteristic of pure degenerative processes rather than inflammatory processes. More than once had he met with cases which could be explained better on such a theory.

Dr. SACHS said that the case was an unusual one, and had been very closely studied by him for a number of months. He had at first supposed there was a myelitis or a poliomyelitis on the left side, but he had abandoned that idea because of one symptom which would be hard to explain if there were only a myelitis, *i.e.*, the sensory disturbances in the arm. He saw no reason to depart from the diagnosis he had expressed. He believed that this case differed from others of diphtheritic palsy in that instead of the peripheral portion of the nerve being affected by the diphtheritic poison, the part of the plexus very near to the spinal cord was affected—in other words, the nerve roots. Between the anterior roots and the sympathetic system were communicating branches, and if one or more of these branches were affected, the influence of the cilio-spinal centre would be cut off. This would explain the loss of function without supposing an invasion of the cord.

Dr. ONUF said that if we assumed an affection outside of the spinal cord, we must assume that it is at the point of union of the two roots where the sensory fibres had passed the spinal ganglion and joined the motor roots. It was at this point that the communicant branch of the sympathetic nerve which conducts the pupillary fibres entered. Such a combination of symptoms could not be explained by any other lesion. Dr. Sachs' patient showed impairment of tactile sensation, also diminution of pressure and pain sense. It was hardly possible to assume that such a combination of symptoms could be produced by an affection of the anterior gray substance of the cord; we must assume an affection of the eighth cervical and first dorsal nerve close to the point where the motor and sensory roots meet the communicant branch which conveys the fibres to the pupil.